REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP) FOR SULFUR DIOXIDE (SO_2)

HARRIS COUNTY SO_2 SIP

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
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RULE LOG NO. 96181-SIP-AI

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A. INTRODUCTION

Requirements for State Implementation Plans (SIP) specified in 40 Code of Federal Regulations (CFR) Part 51.12 provide that "...in any region where existing (measured or estimated) ambient levels of pollutant exceed the levels specified by an applicable national standard," the plan shall set forth a control strategy which shall provide for the degree of emission reduction necessary for attainment and maintenance of such national standard. Ambient levels of sulfur dioxide (SO_2) and oxides of nitrogen (NO_x), as measured from 1975 through 1977, did not exceed the national standards set for these pollutants anywhere in Texas. Therefore, no control strategies for these pollutants were included in revisions to the Texas SIP submitted on April 13, 1979. Control strategies were submitted and approved for inclusion in the SIP for areas in which measured concentrations of ozone, total suspended particulate (TSP), or carbon monoxide (CO) exceeded a National Ambient Air Quality Standard (NAAQS) during the period from 1975 to 1977. On October 5, 1978, the Administrator of the U.S. Environmental Protection Agency (EPA) promulgated a lead ambient air quality standard. The Federal Clean Air Act (FCAA) Amendments of 1977 required that each state submit an implementation plan for the control of any new criteria pollutant. A SIP revision for lead was submitted in March of 1981.

The control strategies submitted in 1979 provided by December 31, 1982 the amount of emission reductions required by EPA policy to demonstrate attainment of the primary NAAQS, except for ozone in the Harris County nonattainment area. For that area, an extension to December 31, 1987 was requested, as provided for in the FCAA Amendments of 1977.

Supplemental material, including emission inventories for volatile organic compounds (VOC) and TSP submitted with the 1979 SIP revisions, is included in Appendices H and O of the 1979 SIP submittal.

Proposals to revise the Texas SIP to comply with the requirements of the FCAA Amendments of 1977 were submitted to EPA on April 13, November 2, and November 21, 1979. On December 18, 1979 (44 FR 75830-74832), EPA approved the proposed revision to the Texas SIP relating to vehicle inspection and maintenance and extended the deadline for attainment of the NAAQS for ozone in Harris County until December 31, 1987. (See Appendix Q of the 1979 SIP submittal for the full text of the extension request and the approval notice.) On March 25, 1980 (45 FR 19231-19245), EPA approved and incorporated into the Texas SIP many of the remaining provisions included in the proposals submitted by the state in April and November 1979. The March 25, 1980 *Federal Register* notice also included conditional approval of a number of the proposed SIP revisions submitted by the state.

Additional proposed SIP revisions were submitted to EPA by the state on July 25, 1980 and July 20, 1981 to comply with the requirements of the March 25, 1980 conditional approvals. By May 31, 1982, all of the proposed revisions to the Texas SIP submitted to EPA in April and November 1979, July 1980, and July 1981, with the exception of provisions relating to the definition of major modification used in new source review (NSR) and certain portions of the control strategy for TSP in Harris County, had been fully approved or addressed in a *Federal Register* notice proposing final approval. The NSR provisions were approved on August 13, 1984.

The FCAA Amendments of 1977 required SIPs to be revised by December 31, 1982 to provide additional emission reductions for those areas for which EPA approved extensions of the deadline for attainment of the NAAQS for ozone or CO. Paragraph B.5. of this section of the SIP contains the revision to the Texas SIP submitted to comply with the FCAA Amendments of 1977 and EPA rules for 1982 SIP revisions. Supplementary emissions inventory data and supporting documentation for the revision are included in Appendices Q through Z of the 1982 SIP submittal.

The only area in Texas receiving an extension of the attainment deadline to December 31, 1987 was Harris County for ozone. Proposals to revise the Texas SIP for Harris County were submitted to EPA on December 9, 1982. On February 3, 1983, EPA proposed to approve all portions of the plan except for the Vehicle Parameter Inspection/Maintenance (I/M) Program. On April 30, 1983, the EPA Administrator proposed sanctions for failure to submit or implement an approvable I/M program in Harris County. Senate Bill 1205 was passed on May 25, 1983 by the Texas Legislature to provide the Texas Department of Public Safety (DPS) with the authority to implement enhanced vehicle inspection requirements and enforcement procedures. On August 3, 1984, EPA proposed approval of the Texas SIP pending receipt of revisions incorporating these enhanced inspection procedures and measures ensuring enforceability of the program. These additional proposed SIP revisions were adopted by the state on November 9, 1984. Final approval by EPA was published on June 26, 1985.

Although the control strategies approved by EPA in the 1979 SIP revisions were implemented in accordance with the provisions of the plan, several areas in Texas did not attain the primary NAAQS by December 31, 1982. On February 23, 1983, EPA published a *Federal Register* notice identifying those areas and expressing the intent to impose economic and growth sanctions provided in the FCAA. However, EPA reversed that policy in the November 2, 1983 *Federal Register*, deciding instead to call for supplemental SIP revisions to include sufficient additional control requirements to demonstrate attainment by December 31, 1987.

On February 24, 1984, the EPA Region 6 Administrator notified the Governor of Texas that such supplemental SIP revisions would be required within one year for ozone in Dallas, Tarrant, and El Paso Counties and CO in El Paso County. The Texas Air Control Board (TACB) requested a six-month extension

of the deadline (to August 31, 1985) on October 19, 1984. EPA approved this request on November 16, 1984.

Proposals to revise the Texas SIP for Dallas, Tarrant, and El Paso Counties were submitted to EPA on September 30, 1985. However, the revisions for Dallas and Tarrant Counties did not provide sufficient reductions to demonstrate attainment of the ozone standard and on July 14, 1987, EPA published intent to invoke sanctions. Public officials in the two counties expressed a strong desire to provide additional control measures sufficient to satisfy requirements for an attainment demonstration.

A program of supplemental controls was taken to public hearings in late October 1987. As a result of testimony received at the hearings, a number of the controls were modified and several were deleted, but sufficient reductions were retained to demonstrate attainment by December 31, 1991. These controls were adopted by the TACB on December 18, 1987 and were submitted to EPA as proposed revisions to the SIP. Supplemental data and supporting documentation are included in Appendices AA through AO of the 1987 SIP submittal.

The FCAA Amendments of 1990 authorized EPA to designate areas failing to meet the NAAQS for ozone as nonattainment and to classify them according to severity. The four areas in Texas and their respective classifications include: Houston/Galveston (severe), Beaumont/Port Arthur (serious), El Paso (serious), and Dallas/Fort Worth (moderate).

The FCAA Amendments required a SIP revision to be submitted for all ozone nonattainment areas classified as moderate and above by November 15, 1993 which described in part how an area intends to decrease VOC emissions by 15%, net of growth, by November 15, 1996. The amendments also required all nonattainment

areas classified as serious and above to submit a revision to the SIP by November 15, 1994 which described how each area would achieve further reductions of VOC and/or NO_x in the amount of 3.0% per year averaged over three years and which includes a demonstration of attainment based on modeling results using the Urban Airshed Model (UAM). In addition to the 15% reduction, states were also required to prepare contingency rules that will result in an additional 3.0% reduction of either NO_x or VOC, of which up to 2.7% may be reductions in NO_x. Underlying this substitution provision is the recognition that NO_x controls may effectively reduce ozone in many areas and that the design of strategies is more efficient when the characteristic properties responsible for ozone formation and control are evaluated for each area. The primary condition to use NO_x controls as contingency measures is a demonstration through UAM modeling that these controls will be beneficial toward the reduction of ozone. These VOC and/or NO_x contingency measures would be implemented immediately should any area fall short of the 15% goal.

Texas submitted rules to meet the Rate-of-Progress (ROP) reduction in two phases. Phase I consisted of a core set of rules comprising a significant portion of the required reductions. This phase was submitted by the original deadline of November 15, 1993. Phase II consisted of any remaining percentage toward the 15% net of growth reductions, as well as additional contingency measures to obtain an additional 3.0% of reductions. Phase II was submitted by May 15, 1994. The complete list of contingency measures was submitted by November 15, 1994. The appropriate compliance date was to be incorporated into each control measure to ensure that the required reductions will be achieved by the November 15, 1996 deadline. A commitment listing the potential rules from which the additional percentages and contingency measures were selected was submitted in conjunction with the Phase I SIP on November 15, 1993. That list of Phase II rules was intended to rank options available to the state and to identify potential rules available to meet 100% of the targeted reductions and contingencies. Only those portions of the Phase II rules needed to provide reasonable assurance of achieving the targeted reduction requirements were adopted by the commission.

The Dallas/Fort Worth (DFW) and El Paso (ELP) areas achieved sufficient reductions with the 15% ROP SIP to demonstrate attainment by 1996. Attainment Demonstration SIP Revisions for these two areas were submitted on September 14, 1994.

The FCAA Amendments of 1990 classified the Beaumont/Port Arthur (BPA) area as a serious nonattainment area. The BPA nonattainment area includes Hardin, Jefferson, and Orange Counties. The BPA nonattainment area has an ozone design value of 0.16 ppm, which places the area in the serious classification.

The FCAA Amendments of 1990 require a Post-96 ROP SIP revision and accompanying rules to be submitted by November 15, 1994. According to the FCAA Amendments, this submittal had to contain an Attainment Demonstration based on UAM. Additionally, the revision had to demonstrate how the Houston/Galveston (HGA) and BPA nonattainment areas intend to achieve a 3% per year reduction of VOC and/or NO_x until the year 2007, and additional reductions as needed to demonstrate modeled attainment. The plan was also required to carry an additional 3% of contingency measures to be implemented if the nonattainment area fails to meet a deadline. To use NO_x reductions for all or part of the Post-96 controls or the contingency measures required a demonstration using UAM showing that NO_x controls would be beneficial in reducing ozone.

On November 9, 1994, the state submitted a SIP revision designed to meet the 3% per year ROP requirements for the years 1997-1999. This Post-96 ROP SIP revision detailed how the BPA and HGA nonattainment areas intend to achieve these three years' reductions of VOC (or 9% net-of-growth). Most of this amount was achieved by quantifying additional reductions due to existing rules and reductions due to federally-mandated rules. Rules to achieve the further reductions needed to meet the ROP SIP goal were

submitted to EPA on January 11, 1995. This submittal included modeling demonstrating progress toward attainment, using a 1999 future year emissions inventory.

On August 14, 1994, the state submitted preliminary UAM modeling results for the BPA and HGA nonattainment areas that showed the relationship between emission levels of VOC and NO_x, and ozone concentrations. This modeling was conducted with a 1999 future year emissions inventory. Based on the results of this preliminary modeling, which show a disbenefit to NO_x reductions, on April 12, 1995 the state received a temporary Section 182(f) exemption from all NO_x requirements including reasonably available control technology (RACT), I/M, NO_x NSR, and transportation conformity requirements. Permanent §182(f) exemptions from all NO_x requirements were granted for DFW and ELP, and temporary exemptions until December 31, 1996 for HGA and BPA. The commission has subsequently requested that EPA extend this date until December 31, 1997.

On March 2, 1995, Mary Nichols, EPA Assistant Administrator for Air and Radiation, issued a memo which gave states some flexibility to design a phased Attainment Demonstration. It provided for an initial phase which was intended to continue progress in reducing levels of VOC and/or NO_x while giving states an opportunity to address scientific issues such as modeling and transport. The second phase was designed to draw upon the results of the scientific effort and design a plan to bring the area into attainment. To constitute Phase I under this approach, the EPA guidance required that states submit the following SIP elements by December 31, 1995:

- Control strategies to achieve reductions of ozone precursors in the amount of 3% per year from the 1990 baseline emissions inventory (EI) for the years 1997, 1998, and 1999.

- UAM modeling out through the year 1999, showing the effect of previously-adopted control strategies which were designed to achieve a 15% reduction in VOCs from 1990 through 1996.

- A demonstration that the state has met the VOC RACT requirements of the FCAA Amendments.

- A detailed schedule and plan for the "Phase II" portion of the attainment demonstration which will show how the nonattainment areas can attain the ozone standard by the required dates.

- An enforceable commitment to:

- Participate in a consultative process to address regional transport,

- Adopt additional control measures as necessary to attain the ozone NAAQS, meet ROP requirements, and eliminate significant contribution to nonattainment downwind, and

- Identify any reductions that are needed from upwind areas to meet the NAAQS.

Texas submitted the first two of these required sections in November 1994. The remaining three, a VOC RACT demonstration, the required commitments, and a Phase II plan and schedule, were submitted on January 10, 1996 to EPA.

ROP SIP modeling is being developed for the HGA nonattainment area in two phases using the UAM. The first phase of ROP modeling was the modeling submitted in January 1995, as described above. The second phase of the ROP modeling is being conducted using data obtained primarily from the Coastal Oxidant

Assessment for Southeast Texas (COAST) project, an intensive 1993 field study. The COAST modeling for HGA and the associated SIP are projected to be completed by December 1996 for submittal in May of 1997. Control strategies developed in this second phase will be based on a more robust data base, providing a higher degree of confidence that the strategies will result in attainment of the ozone NAAQS or target ozone value. A discussion of the schedule for the UAM modeling for the Phase II Attainment Demonstration can be found in Appendix 11-F of the July 1996 submittal. Modeling for the BPA attainment demonstration is underway as well, and is planned to be submitted to EPA along with HGA's in May of 1997.

On January 29, 1996, the EPA proposed a limited approval/limited disapproval for the Texas 15% ROP SIP revision. The EPA proposed a limited approval because the SIP revision will result in significant emission reductions from the 1990 baseline, and will, therefore, improve air quality. Simultaneously, the EPA proposed a limited disapproval because they believe that the plan fails to demonstrate sufficient reductions to meet the 15% ROP requirements. They also proposed a limited approval/disapproval of the contingency plans (designed to achieve an additional 3% of reductions if needed because a milestone is missed) along the same lines as the 15% action. The EPA stated that some of the control measures submitted along with the SIP revision did not meet all of the requirements of the FCAA Amendments of 1990, and, therefore, cannot be approved. The EPA further stated that they were not making a determination at this time whether the state has met its requirements regarding RACT, or any other underlying FCAA Amendments of 1990 requirements. Finally, the EPA proposed approval of the Alternate Means of Control portion of the November 9, 1994 Post-96 SIP submittal, but did not propose action on any other portion of that submittal.

Additionally, on November 29, 1995, the President signed the National Highway Systems Designation Act, which, among other things, prohibited EPA from discounting the creditable emissions from a decentralized vehicle I/M testing program if an approvable conditional I/M SIP revision was submitted to EPA within 120

days of the bill's signature. EPA's Office of Mobile Sources issued guidance stating that they will accept an interim I/M SIP proposal and Governor's letter 120 days after signature of the bill in lieu of an adopted SIP revision. The SIP proposal and letter was submitted to the EPA prior to the March 27, 1996 deadline to meet the 120 day timeframe. The final I/M SIP revision (Rule Log No. 96104-114-AI), commonly referred to as the "Texas Motorist's Choice Program," was adopted by the commission on May 29, 1996 and submitted to the EPA by the state on June 25, 1996. On October 3, 1996, EPA proposed (61 FR 51651-51659) conditional interim approval of the Texas Motorist's Choice Program based upon the state's good faith estimate of emission reductions and the program's compliance with the Clean Air Act.

Part of EPA's determination that the new I/M SIP is approvable depends on the program's ability to achieve sufficient creditable VOC reductions so that the 15% ROP can still be achieved. The commission designed the revised I/M program to fit in with the other elements of the 15% SIP to achieve the full amount of creditable reductions required. The I/M program also achieves creditable reductions for the Post-96 ROP SIP.

Changes to the I/M program have had an impact on the El Paso §818 Attainment Demonstration as well. This demonstration was predicated on the assumption that the I/M program would be implemented as adopted for the 15% SIP. An addendum to the §818 Demonstration shows that the basic underlying assumptions of the modeling still pertain despite the revisions to the I/M program.

The Employer Trip Reduction (ETR) program revision to the SIP and ETR rule were adopted in October 1992 by the TACB to meet the mandate established in the FCAA Amendments of 1990 (§182 (d) (1) (B)). This section of the FCAA required states with severe or extreme ozone nonattainment areas to develop and implement ETR programs in those areas. For Texas, the only area affected was the HGA area. The ETR

program required large employers (those with 100 or more employees) to implement trip reduction programs that would increase the average passenger occupancy rate of vehicles arriving at the workplace during the peak travel period by 25% above the average for the area.

Congress amended the FCAA in December of 1995 by passing House Rule 325. This amendment allows the state to require an ETR program at its discretion. It also allows a state to "remove such provisions (ETR program) from the implementation plan...if the state notifies the Administrator, in writing, that the state has undertaken, or will undertake, one or more alternative methods that will achieve emission reductions (1.81 tons/day) equivalent to those achieved by the removed...provisions." As such, large employers will no longer be mandated to implement trip reduction programs. The HGA ozone nonattainment area will, however, through the coordination of the Houston-Galveston Area Council, implement a voluntary regional initiative to reduce vehicle trips.

The 1990 Adjusted Base Year EI was submitted on November 12, 1993. It is the official inventory of all emission sources (point, area, on-road and off-road mobile) in the four nonattainment areas. There have been several changes to the EI due to changes in assumptions for certain area and non-road mobile source categories. Changes to the baseline EI have affected the target calculations and creditable assumptions made in the 15% and 9% SIPs.

In December of 1990, then-Texas Governor William Clements requested that the BPA area be reclassified as a "moderate" ozone nonattainment area in accordance with Section 181(a)(4) of the FCAA Amendments of 1990. That request was denied on February 13, 1991. A recent review of the original request and supporting documentation has revealed that this denial was made in error. As provided by Section 110(k)(6) of the Act,

the EPA Administrator has the authority to reverse a decision regarding original designation if it is discovered that an error had been made.

Monitoring data from a privately-funded, special purpose monitoring network which was not included in the Aerometric Information Retrieval System database was improperly used to deny this request. Furthermore, subsequent air quality trends demonstrate that BPA is more properly classified as a moderate nonattainment area, and should attain the standard by the required date for moderate areas of November 15, 1996. Therefore, Governor Bush sent a letter and technical support to EPA on July 20, 1995, requesting that the BPA area be reclassified to moderate nonattainment status. BPA plans to demonstrate attainment one of the following ways:

- Monitored values showing attainment of the standard at state-operated monitors for the years 1994-1996, which is the timeline the FCAA Amendments of 1990 specifies for moderate areas.

- UAM modeling showing attainment of the standard but for transport of ozone and/or precursors.

EPA Region VI verified the data submitted in support of this request, and concurred that it is valid. On June 3, 1996, the reclassification of the BPA area became effective. Because the area was classified as serious, it was following the SIP submittal and permitting requirements of a serious area, which included the requirements for a Post-96 SIP. With this consolidated SIP submittal, the commission has removed the BPA area from the Post-96 SIPs, which became applicable to the HGA nonattainment area only.

Texas is required under federal and state mandates to develop a clean-fuel vehicle program which will reduce mobile source emissions. Section 182 (c)(4) of the FCAA Amendments of 1990 required states to either adopt the Federal Clean Fuel Fleet (FCFF) Program outlined in Section 246 of the FCAA Amendments of

1990, or implement a program which demonstrates long-term reductions in ozone-producing and toxic air emissions equal to those achieved under the FCFF Program.

The FCFF Program requires federal, state, and local governments, and private fleets to purchase clean-fuel vehicles in areas classified by EPA as being in serious, severe, or extreme nonattainment of the NAAQS for ozone and CO. In Texas, two nonattainment areas (NAAs) would have been affected by the FCFF Program: HGA, and ELP. The federal program mandates increasing percentages of clean-fuel vehicle purchases by the affected fleets in the covered NAAs in model years 1998, 1999, and 2000. The clean fuels are defined under the FCFF as any fuel or power source that enables a vehicle to comply with the clean-fuel vehicle standards. These clean fuels currently include methanol and ethanol containing 85% or more alcohol by volume, reformulated gasoline, diesel, natural gas, liquefied petroleum gas (LPG), hydrogen, and electricity.

The state of Texas, in a committal SIP revision submitted to the EPA on November 15, 1992, opted out of the FCFF Program in order to implement a fleet emission control program designed by the state.

In 1994, Texas submitted the state's opt-out program in a SIP revision to the EPA and adopted rules to implement the Texas Alternative Fuel Fleet program as a substitute to the FCFF program in the areas of Texas classified by EPA as being in serious, severe, or extreme nonattainment of the NAAQS for ozone and CO, which included the HGA, BPA, and ELP areas.

In 1995, the 74th Texas Legislature modified the state’s alternative fuels program (Health and Safety Code, Chapter 382) through the passage of Senate Bill 200. The Legislature facilitated fuel neutrality through the incorporation of the federal low emission vehicle (LEV) standards for certain affected fleets regardless of fuel type. The legislation required the commission to adopt regulations to implement the program.

In response, the commission adopted regulations to implement the modified program and concurrently developed a revision to the SIP outlining the state's substitute program to the FCFF program. Texas submitted the revised SIP to EPA for substitution of the FCFF Program in August 1996 and withdrew the SIP submitted to EPA in July 1994.

The state's substitute program is focused on the reduction of mobile source emissions through the acquisition of clean-fuel vehicles, which are defined as vehicles certified by EPA to meet or exceed the LEV standards. The state's substitute program will reduce harmful tailpipe emissions from mobile sources through the use of clean-fuel vehicles in the affected areas.

The state's substitute program covers local government and private fleets operated primarily within the serious, severe, or extreme NAAs of Texas. Currently, these NAAs include the HGA, and ELP areas. The BPA nonattainment area was redesignated by EPA to a moderate nonattainment area in 1996. The state's substitute program requires local government and private fleets after September 1, 1998, to ensure that certain percentages of their vehicle purchases be certified by EPA as clean-fuel vehicles. In addition, the affected fleets must maintain certain percentages of these clean-fuel vehicles within their total aggregated fleets. Local government and private fleets affected by the requirements of the state's substitute program may use any vehicle/fuel combination which has been certified by EPA to meet or exceed the federal LEV standards.

Table I - 1 provides a brief comparison of the requirements and issues between the state's substitute program and the FCFF program.

Table I-1. **Comparison of Fleet Programs**

Items	Federal Clean Fuel Fleet Program (FCAA) Amendment 1990)	The state's substitute program
Fuel type	Any fuel or power source which allows the vehicle to meet LEV standards	Any fuel or power source which allows the vehicle to meet LEV standards.
Emission standards	LEV required. ULEV, ILEV & ZEV earn credit.	LEV required. ULEV, ILEV & ZEV earn credit.
Covered fleets	Federal, state, local government, and private fleets of 10 or more fleet vehicles which are centrally fueled or capable of being centrally fueled.	Local government fleets: > 15 vehicles; Private persons: > 25 fleet vehicles;
Vehicle class	LDV, LDT ≤ 8,500 lbs GVWR., HDT 8,500 – 26,000 lbs GVWR	LDV, LDT ≤ 8,500 lbs GVWR., HDT 8,500 – 26,000 lbs GVWR
Exempted vehicles	Emergency, law enforcement, non-road, rental, dealer, test, national security, garaged at residence, and vehicles > 26,000 lbs. GVWR.	Emergency, law enforcement, nonroad, garaged at residence, and vehicles > 26,000 lbs. GVWR.
Covered Areas	Serious, severe, and extreme ozone and/or carbon monoxide nonattainment areas of 250,000 or more (Houston/Galveston, and El Paso).	The Houston/Galveston, and El Paso non-attainment areas.
Phase-in Schedule	**LDVs, LDTs:** 30% of purchases in MY 1998 50% of purchases in MY 1999 70% of purchases in MY 2000+ **HDVs:** 50% in MY 1998+	Local government & private: 10% of total fleet by 9/1/98 **or** 30% of purchases after 9/1/98 20% of total fleet by 9/1/00 **and** 50% of purchases after 9/1/00 45% of total fleet by 9/1/02 **and** 90% of purchases after 9/1/02
Exceptions	No.	Yes - Contractual harm, lack of refueling facilities, insufficient financing, or not cost-effective over the life of the vehicle.
Credit trading	Yes - Mobile Source Emission Reduction Credits (MERCs)	Yes - Mobile Source Emission Reduction Credits (MERCs) and Program Compliance Credits (PCCs)
Program incentives	TCM exemptions and MERCs	MERCs & PCCs

Statutory authority for the state's substitute program is found in the Texas Health and Safety Code, Section 382.131 through 382.143. Under the Texas Health and Safety Code, Sections 382.002 and 382.011, the commission is given "the powers necessary or convenient to carry out its responsibilities" to establish and maintain air quality standards. The commission also has broad authority to adopt rules pursuant to the Texas Health and Safety Code, Section 382.017. The state's substitute program is codified in the 30 Texas Administrative Code (TAC), §§114.30, 114.32, through 114.34, and 114.36 through 114.40.

Under the state's substitute program, harmful tailpipe emissions from mobile sources will be reduced through the use of clean-fuel vehicles. The FCAA Amendments of 1990 clearly indicate that it is beneficial for certain vehicles to be clean-fuel vehicles as one strategy to assist in bringing areas into attainment with the NAAQS.

On June 29, 1994 the commission adopted a revision to the SO_2 SIP regarding emissions in Harris County. The SIP revision was required by the U.S. Environmental Protection Agency (EPA) because of exceedances of the SO_2 NAAQS in 1986, 1988, and 1990. An EPA study conducted by Scientific Applications International Corporation also predicted SO_2 exceedances. On April 22, 1991 the EPA declared that portions of Harris County were potentially in nonattainment of the SO_2 NAAQS. Consequently, the Houston Regional Monitoring (HRM) Corporation volunteered to find reductions in SO_2 in order to prevent being redesignated to nonattainment. The HRM's efforts resulted in finding voluntary SO_2 reductions. These reductions were adopted in thirteen commission Agreed Orders and were included as part of the June 29, 1994 SIP revision. The EPA approved the Harris County SO_2 SIP on March 6, 1995 (60 FR 12125). Subsequent to this revision, two of the participating companies requested modification of their commission orders. While these are not "modifications" in terms of construction, permitting, or material throughput, the SIP is revised to

show the new emission rates for sulfur dioxide at Simpson Pasadena Paper Company and Lyondel-Citgo Refining Company, Ltd. See section VI.G.1 of the SIP entitled the "Harris County SO_2 SIP."

G. SULFUR DIOXIDE (SO_2)

1. Harris County SO_2 State Implementation Plan (SIP) Revision

   a. - f. (No Change.)

   g. 1997 Addendum Regarding Modified Commission Orders (New.)

This section is a modification to the State Implementation Plan (SIP) for Sulfur Dioxide (SO_2). SO_2 is one of the six National Ambient Air Quality Standards (NAAQS) addressed in the SIP. While there are no SO_2 nonattainment areas in Texas, the SIP must demonstrate attainment and maintenance of the NAAQS. The current control strategy for SO_2 includes state and federal technology standards and voluntary emission reductions. The following SIP revision is restricted to voluntary SO_2 reductions in Harris County, Texas.

The purpose of this SIP revision in 1997 is to incorporate modifications to two of the thirteen Agreed Orders. The remaining sections of the SIP remain the same. While on the scale of "minor technical corrections," the modified commission orders must be incorporated into the SIP because the new emission rates differ from what the EPA had previously approved. The two Agreed Order modifications concern grandfathered units at Simpson Pasadena Paper Company and Lyondell-Citgo Refining Company. The commission approved changes to both Agreed Orders on July 24, 1996. However, public comment concerning these changes to the SIP was required before sending the revision to the EPA.

1) Simpson Pasadena Paper Company

Located at North Shaver Street at Washburn Tunnel in Houston, Simpson Pasadena Paper Company (Account No. HG-0129-K) signed the Harris County SO_2 SIP (Commission Order No. 94-22). Of the seven grandfathered emission points which are identified in the original Agreed Order, the largest is the #6 Kraft Recovery Boiler (SN15, 400 pounds of SO_2 per hour). In July 1995 Simpson Pasadena requested an increase in the #6 Recovery Boiler during times when an adjacent, permitted unit was undergoing an outage. This would allow Simpson to continue making paper while the #7 Kraft Recovery Boiler was undergoing maintenance, such as for repairing the electrostatic precipitator. The commission approved a temporary "emissions trade" on September 20, 1995, which allowed the #6 Boiler to operate up to 600 pounds per hour up to a period of 30 days. On December 5, 1995, Simpson Pasadena requested that this temporary arrangement be made permanent and indicated that there would be no net increase in SO_2 emissions. On July 24, 1996 this request was granted.

2) Lyondel-Citgo Refining Company Ltd.

Located at 12000 Lawndale, Houston, Lyondell-Citgo Refining Company (Account No. HG-0048-L) also signed the Harris County SO_2 SIP (Commission Order 94-15). The issue regarding Lyondell-Citgo deals with minor technical problems with calculating their SO_2 emission rates. During the dispersion modeling, Houston Region Monitoring (HRM) Corporation's contractor assigned hourly allowable emission rates from annual average firing rates. This method was incorrect because the emissions rates should have been calculated from maximum fuel gas concentrations (160 parts per million of hydrogen sulfide, as converted to SO_2). Correcting the emissions caused the combined emissions to rise from 199.42 to 263.39 pounds per

hour. No additional SO_2 emissions are being emitted into the atmosphere; instead the modeling inputs needed to be changed to reflect the best estimates of SO_2 for the purposes of modeling.

This increase in modeled SO_2 emission rates, even though only a "paper" increase, has been evaluated by agency modeling staff. The analysis shows that the new emission rates from Lyondell-Citgo will not exceed the NAAQS (see Appendix C). The Industrial Source Complex Short-Term 3 (ISCST3) model was used. Two scenarios were compared. The first scenario used the information provided by HRM and its contractor, Radian, Incorporated. The second scenario used the new emission rate information submitted by Lyondell-Citgo. The differences from the first and second scenarios were noted, with respect to the 3-hour, and 24-hour, and annual SO_2 NAAQS. The differences between the first and second scenarios were added as an increment to the original Radian model. As noted above, all values were below the applicable NAAQS.

As stated above, all sections of the Harris County SO_2 SIP submitted to the EPA on August 3, 1994 remain the same except for the two modified orders. These modifications do not affect the modeling demonstration or the levels of ambient SO_2. Copies of the original Harris County SO_2 SIP are available from Mr. Chuck Mueller at (512) 239-1916.

h. Appendices (Revised.)